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**(54) AUTOMATED METHOD AND APPARATUS FOR DETACHABLY SECURING FLEXIBLE PACKAGES TO A DISPLAY STRIP**

# AUTOMATISIERTES VERFAHREN UND VORRICHTUNG ZUM LÖSBAR VERBINDELN VON FLEXIBLEN VERPACKUNGEN AUF EINEM ANZEIGESTEIFEN

## **PROCEDE ET APPAREIL AUTOMATISES DESTINES A FIXER DE MANIERE AMOVIBLE DES EMBALLAGES SOUPLES SUR UNE BANDE DE PRESENTATION**

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**Description**

## **BACKGROUND OF THE INVENTION**

#### **Field of the Invention**

[0001] The present invention relates generally to systems for affixing packages to a carrier strip and, more particularly, to a method and apparatus for detachably securing flexible packages to a display carrier strip and simultaneously forming a sealed end of each package.

### Description of Background Art

[0002] It is known in the art to form flexible packages of various products, e.g., snack food products, and affix the packages to a carrier strip which may be displayed in a grocery store or the like. The customer can remove a package from the carrier without damaging the package, i.e., without adversely affecting the sealed condition of the package. One of the primary attributes of such display strip systems is their suitability for use in a retail establishment with limited space. The display strips are considerably smaller than conventional product display racks, which racks may not fit in particular establishments due to space limitations or may not be justified in view of limited sales volume. The display strip and attached packages require little space and may be positioned on a counter or other suitable support.

[0003] U.S. Patent No. 3,864,895 discloses a bag forming, filling, and sealing machine for producing small packages of a product adhesively secured to a backing sheet.

[0004] U.S. Patent No. 4,422,552 to Palmer et al. and U.S. Patent No. 4,476,619 to Palmer disclose methods and apparatus for folding the end seal or flange of a bag into the slot of a display card. The steps of folding and tucking the end seals of numerous packages into a slotted display card are often performed manually and consume considerable time and expense. The prior art, however, includes alternative methods of attaching flexible packages to a display card.

[0005] For example, U.S. Patent No. 2,272,623 to Runner discloses a display card with packages removably attached thereto by adhesive. In U.S. Patent No. 4,003,782 to Farrelly, manufactured bags are applied to two lines of pressure sensitive adhesive and then stored in a carton or the like. It is also known to attach empty packages to a display or mounting support base and then fill and seal the packages. See U.S. Patent No. 3,331,182 to Hannon. Several problems arise with the aforementioned methods of securing packages to a display strip. One problem that often occurs when the packages are adhesively attached to the display strip is that the packages cannot easily be removed from the strip without damaging the sealed condition of the packages. Additional problems arose in attempts to automate the attachment of the carrier strip to the flexible

packages due to the limited space available below the sealing jaws of a conventional bagmaking apparatus. In other words, there was little or no room below the seal jaws to accommodate automatic attachment equipment.

[0006] It is apparent that there is a need in the art for a method and apparatus for removably securing flexible packages to a display strip which are free of the problems present in prior art systems.

## SUMMARY OF THE INVENTION

[0007] The present invention provides a method and apparatus for detachably securing flexible packages to a display carrier strip while simultaneously sealing an end of each package. In its preferred form, the present invention includes a novel sealing jaw assembly which permits the display carrier strip to be fed therethrough into close proximity with the package preform. The sealing jaws place a transverse seal in the package preform which forms the top seal of a filled package extending below the jaws, and the bottom seal of an empty package extending above the jaws. The top seal of the filled package is detachably secured to the carrier display strip simultaneously with the forming of the transverse seal. The continuous display strip and attached packages then may be transported by a suitable conveyor device to a packaging area or the like and prepared for shipment.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0008] Additional features and advantages of the present invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings wherein:

**FIG. 1** is a somewhat schematic view of an automated assembly apparatus for detachably securing flexible packages to a display strip.

FIG. 2A is a perspective view of a sealing jaw according to the present invention.

FIG. 2B is an end elevation view of the sealing jaw shown in FIG. 2A looking in the direction of arrows b-b in FIG. 2A;

FIG. 2C is a sectional view of the sealing jaw shown in FIG. 2A looking in the direction of arrows c-c in FIG. 2A;

**FIG. 3A** is an enlarged view of the encircled portion in FIG. 1;

**FIG. 3B** is a front elevational view of the portion shown in FIG. 3 looking in the direction of arrows a in FIG. 3;

FIG. 4A is a front elevational view of the finished display strip and attached packages.

FIG. 4B is a side elevational view of the display strip and attached packages shown in FIG. 3A; and FIG. 4C is a side elevational view of the display strip.

FIG. 4C is a front elevational view of the display

strip and attached packages shown in FIG. 3A with some of the packages removed.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

[0009] Referring to FIG. 1, an automated apparatus for detachably securing flexible packages to a display strip is indicated generally by the reference numeral 10. A bagmaking apparatus, e.g., a vertical form, fill, and seal apparatus (VFFS), is shown schematically at 12. Bagmaking apparatus such as VFFS machines are known in the art and will not be described in detail in the present application.

[0010] Bagmaking apparatus 12 forms packaging material into package preforms which are advanced in consecutive fashion through the apparatus 12. In particular, a preform is transversely sealed by sealing jaws at a sealing station disposed below the filling tube of the bagmaking apparatus. The seal constitutes the top edge of a filled package extending below the sealing station and the bottom edge of a yet to be filled package extending above the sealing station. A knife mechanism cuts the preform at the transverse seal to separate same into two separate packages; the lower package being filled and sealed at both ends and the upper package being empty and sealed at its lower end. After separating the packages by cutting the transverse seal on the preform, the empty package is advanced and filled to bring its top edge to the sealing station where it is sealed and separated from the next package, i.e., the package now extending above the sealing station.

[0011] The sealing station is indicated generally at 50 in FIG. 1 and includes sealing jaws 52, 53 for forming the aforementioned transverse seals. A lower sealing assembly for removably attaching the packages to the display strip is indicated generally at 60 in FIG. 1 and includes lower sealing blocks or bars 62, 63. As best seen in FIGS. 2A-2C, lower sealing blocks or bars 62, 63 preferably are respectively secured to sealing jaws 52, 53. Sealing jaw 52 has a cut-out portion 66 which defines a slot 68 extending through the jaw for reasons that will be described below.

[0012] With attention directed to FIG. 1, a supply reel 14 of display carrier strip material has a strap web 18 extending therefrom toward bagmaking apparatus 12. A reel friction brake 16 controls the speed of rotating supply reel 14. The display carrier strip is preferably manufactured from a material that is flexible but yet stiff enough to support a plurality of packages as seen in FIG. 4A which shows the final product. The display strip material is selected so that it does not melt and/or deform before the attachment of the packages to the strip, i.e., as the strip is fed through the sealing jaw which typically reaches 375°F during operation. For example, the display carrier strip may be manufactured from suitable plastic materials, such as paper laminated to coextruded metallized polyethylene to 40 micron

**polypropylene.**

[0013] The carrier strip web 18 passes from supply reel 14 to a strip drive mechanism indicated generally at reference numeral 30 and enclosed in circle I in FIG. 1.

5 The strip drive mechanism 30 advances carrier web 18 in a controlled manner relative advancement of the package preforms. The strip drive mechanism 30 can be any device which suitably advances the carrier strip web 18 through the sealing station 50, 60.

[0014] The circled portion I of FIG. 1 is enlarged in FIGS. 4A and 4B and shows a preferred embodiment of a strip drive mechanism 30 that includes a stepper motor 32 having a shaft 34 which drives a stepper wheel 36. The stepper wheel 36 rotates to advance strip web 18 into an elongated slot formed in sealing jaw 52 as described in detail below. A bracket 38 is attached to the side of the housing 20.

18 into an elongated slot formed in sealing jaw 52 as described in detail below. A back-up roller 38 is disposed next to stepper wheel 36 and the strip web 18 passes between the back-up roller 38 and the stepper wheel 36. The back-up roller 38 may be rotatably

20 mounted on a bracket 40 as shown in FIG. 3B. The stepper motor can be precisely controlled to permit the carrier strip web to be properly positioned relative the package preforms advanced by the bagmaking apparatus until the end of the bag.

tus. In addition, the strip drive mechanism 30 can be  
25 programmed such that the stepper motor 32 will be automatically controlled, e.g., by a microprocessor. The stepper wheel preferably includes a rubber wheel having, e.g., a 2 inch diameter and a 3 inch width. The rubber wheel frictionally engages the strip material web 18 and cooperates with back-up roller 38 to advance the web.  
30

[0015] Those skilled in the art will recognize, of course, that means for advancing the carrier strip web other than the above-described stepper motor may be used. For example, an air cylinder device which advances the strip web with air powered mechanical movements may be used in lieu of the stepper motor mechanism.

[0016] With attention directed to FIGS. 2A-2C, sealing jaw 52 of sealing station 50 and sealing block 62 of lower sealing assembly 60 are shown therein in detail. Sealing jaw 52 includes an upper sealing portion 54 and a lower sealing portion 56 separated by a groove 58. The groove 58 extends a limited distance from adjacent

45 the outer surface of sealing portions 54, 56 into the interior of sealing jaw 52. See FIG. 2C. Groove 58 preferably contains a knife mechanism (not shown) which severs the package preform into a lower filled package and an upper empty package as described above. Specifically, upper sealing portion 54 forms the lower transverse seal of the upper package and lower sealing portion 56 forms the upper transverse seal of the filled lower package. After the knife mechanism separates

[0017] The present invention attaches the filled sealed packages into the two packages, the upper package, the bottom edge of which now has been sealed, may be filled and advanced downward, wherein further actuation of the sealing jaws 52, 53 seals the top of the same package.

packages to the display strip 18 simultaneously with the forming of transverse seals as described above. Attached to the sealing jaws 52, 53 by any suitable means are, respectively, sealing blocks 62, 63 of lower sealing assembly 60. As seen in FIGS. 1 and 2C, display carrier web 18 passes from take-up spool 20, past strip drive mechanism 30, through sealing jaw 52, and into engagement with the package. For this purpose, sealing jaw 52 is provided with an elongated slot 68 extending therethrough. A cut-out portion 66 of sealing jaw 52 cooperates with sealing block 62 to define slot 68. In particular, sealing block 62 preferably is secured to sealing jaw 52 so as to cover cut-out portion 66. See FIG. 2B. Sealing block 62 also preferably has a width that is slightly greater than the width of cut-out portion 55 but less than the overall width of sealing jaw 52.

[0018] Lower sealing blocks 62, 63 have mating seal elements 64 disposed thereon as best seen in FIGS. 2A and 2B. The sealing elements 64 of each block 62, 63 are aligned so as to engage each other when the sealing jaws 52, 53 are brought together. The display carrier strip web 18 passes into slot 68 of sealing jaw 52 and then downward from the slot over the sealing elements 64 of sealing block 62. See FIGS. 1, 2A and 2C. This positions the display carrier strip 18 in close proximity with the unsealed top edge of a filled package 72, shown in phantom in FIG. 1. In addition to sealing the top edge of the filled package 72 (and the bottom edge of an overlying empty package), actuation of the sealing jaws 52, 53 detachably secures the top edge of filled package 72 to the display carrier strip 18.

[0019] Lower sealing blocks 62, 63 preferably have a plurality of sealing elements 64 disposed thereon which secure the filled package to the display carrier strip 18 at locations corresponding to the position and number of sealing elements 64. In a preferred embodiment, three sealing elements 64 are included on each sealing block 62, 63. However, those skilled in the art will recognize that different numbers and configurations of sealing elements may be used without departing from the present invention.

[0020] Sealing blocks 62, 63 heat-seal the top edge of the filled package to the display carrier strip 18 upon actuation of the sealing jaws 52, 53. The sealing elements 64 securely affix the package to the strip 18 such that the package may be easily removed from the carrier strip without damaging the sealed condition of the filled, sealed package. The material from which display carrier strip 18 is formed adheres to the packaging material by point heat and pressure applied by sealing blocks 62, 63. Thus, the actuating motion of sealing jaws 52, 53 seals the top edge of the filled package and seals the package to the display carrier strip. This arrangement greatly simplifies the overall procedure and is a significant improvement over prior art systems.

[0021] The carrier strip 18, with the filled, sealed packages 70 attached thereto, is carried by a conveyor mechanism 80 to a location where the strip and pack-

ages are prepared for distribution. The flexibility of the display carrier strip permits the same to be case packed with the packages attached thereto for easy storage and/or transportation.

5 [0022] FIGS. 4A-4C show a display strip produced according to the present invention and having a plurality of packages secured thereto in removable fashion. The display carrier strip 100 includes an adhesive hanger member 110 which serves to secure the entire assembly to a suitable support surface. Of course, any other support or hanger means may be used. The strip 100 has packages 120 removably attached thereto by heat seal connections 130 formed by the strip seal bars or blocks 62, 63 as described above. FIGS. 4A and 4B

10 15 20 25 [0023] FIG. 4C shows the product display strip of FIGS. 4A and 4B with several packages removed. The releasable heat seal connections 130, which permit removal of the packages 120 without damaging their sealed condition, are visible on the portion of the display carrier strip 100 from which packages have been removed.

30 35 40 45 [0024] It is apparent that the method and apparatus of the present invention permit the removable attachment of filled, sealed flexible packages to a display carrier strip without the problems present in prior art systems. The attachment of the packages to the display carrier strip is carried out using the existing motion of the sealing jaws which form the top and bottom edge seals of each package. A precisely controlled strip drive mechanism cooperates with the sealing jaws to eliminate prior art problems in package control and positioning. Moreover, the attachment mechanism for securing the packages to the carrier strip is greatly simplified over prior art systems. Consequently, the present invention significantly reduces manufacturing cost compared with conventional package attachment systems.

50 55 [0025] The features and advantages of the present invention will readily occur to those skilled in the art, as will many modifications and alterations in the preferred embodiments of the invention described herein, all of which may be achieved without departing from the spirit and the scope of the invention as defined by the appended claims.

#### Claims

1. An apparatus for manufacturing a plurality of sealed packages (70) which are detachably secured to a display carrier strip (18), the apparatus comprising:

a bagmaking device (12) for forming a package preform, the preform configured to receive product;

a sealing station (50) disposed adjacent said bagmaking device (12), the sealing station (50) including sealing jaws (52,53) for forming a transverse seal across the preform to form a

- top seal of a filled package extending below the sealing station (50) and a bottom seal of a package to be filled extending above the sealing station (50);  
 the apparatus characterized in that it further comprises:  
 a strip drive device (30) for feeding a continuous, sealable carrier display strip (18) to a location adjacent the sealing station (50); and  
 at least one strip seal bar (62) for detachably securing an end of each package to the carrier display strip (18) simultaneously with the sealing of an end of the package by the sealing jaws (52,53);  
 whereby filled sealed packages (70) are secured to the carrier display strip (18) and can be removed therefrom without damaging the sealed condition of the packages.
2. An apparatus according to claim 1, wherein one of said sealing jaws (52) includes a slot extending therethrough and the carrier strip (18) passes through the slot to a location adjacent the package end to be secured to the carrier display strip (18). 20
3. An apparatus according to claim 2, wherein the slot is defined between said at least one strip seal bar (62) and a cut-out portion (66) of said one of said sealing jaws (52). 25
4. An apparatus according to any preceding claim, wherein a first strip seal bar (62) is secured to a first sealing jaw (52) and a second strip seal bar is secured to a second sealing jaw (53), and wherein activation of said first and second sealing jaws (52,53) to form the transverse package seal activates the first and second seal bars to removably secure a package to the display carrier strip (18). 30
5. An apparatus according to any preceding claim, wherein the strip drive device (30) includes a stepper motor (32) and a stepper wheel (36), and the stepper motor (32) rotates the stepper wheel (36) to controllably advance the display carrier strip (18) toward the sealing station (50). 40
6. An apparatus according to any preceding claim, further comprising:  
 means for separating adjacent preforms along the transverse seal to form the bottom and top seals of packages extending, respectively, above and below the sealing station. 50
7. A method of manufacturing a plurality of filled, sealed packages which are removably secured to a continuous carrier strip (18), the method comprising steps of:  
 forming a series of package preforms, each of which is configured to receive product from a product supply source; and  
 for each preform, forming at a sealing station (50) a transverse seal across the preform to form a top seal of a filled package extending below the sealing station (50) and a bottom seal of a package to be filled extending above the sealing station (50);  
 the method characterized by further comprising the steps of:  
 choosing said carrier strip of a sealable material;  
 positioning said continuous sealable carrier strip (18) adjacent the package preforms; and simultaneously with forming the transverse seal, detachably securing the top of the filled package to the carrier strip (18) by moving the top of the filled package against the display carrier strip (18) and removably joining the top seal of the filled package to the carrier strip (18). 55
8. A method according to claim 7, wherein sealing of the preforms at the sealing station (50) is performed by sealing jaws (52,53) which simultaneously detachably secure an end of the filled package to the carrier strip (18).
9. A method according to claim 8, wherein one sealing jaw (52) includes an opening through which the carrier strip (18) can be passed, the method further comprising passing the carrier strip (18) into close proximity with the package preform and detachably securing the package preform to the carrier strip by the sealing jaws (52,53).
10. A method according to claim 9, wherein the display carrier strip (18) is advanced through the opening in the one sealing jaw (52) and toward the sealing station (50), by rotating a stepper wheel (36) of a strip drive device (30) by means of a stepper motor (32) of the strip drive device (30).
- 45 Patentansprüche
1. Vorrichtung zum Herstellen einer Anzahl von versiegelten Packungen (70), die an einem Trägeranzeigestreifen (18) abnehmbar befestigt sind, wobei die Vorrichtung aufweist:  
 eine Beutelherstellungseinrichtung (12) zur Ausbildung einer Packungsvorform, wobei die Vorform zur Aufnahme eines Produkts geeignet ist;  
 eine Versiegelungsstation (50), die neben der Beutelherstellungseinrichtung (12) angeordnet ist, wobei die Versiegelungsstation (50) Versie-

- gelungssbacken (52, 53) zur Ausbildung einer Querversiegelung über die Vorform aufweist, um eine obere Versiegelung einer gefüllten Packung, die sich unterhalb der Versiegelungsstation (50) erstreckt, und eine untere Versiegelung einer zu füllenden Packung, die sich oberhalb der Versiegelungsstation (50) erstreckt, zu bilden; 5  
dadurch gekennzeichnet, daß die Vorrichtung ferner aufweist:  
eine Streifenantriebseinrichtung (30) zum Zuführen eines fortlaufenden versiegelbaren Trägeranzeigestreifens (18) zu einer Stelle nahe der Versiegelungsstation (50); und wenigstens einen Streifensiegelungsbalken (62) zur abnehmbaren Befestigung eines Endes jeder Packung am Trägeranzeigestreifen (18) gleichzeitig mit der Versiegelung eines Endes der Packung mit den Versiegelungsbakken (52,53);  
wodurch gefüllte versiegelte Packungen (70) an dem Trägeranzeigestreifen (18) befestigt und von diesem ohne Beschädigung des Versiegelungszustandes der Packungen abgenommen werden können. 10  
2. Vorrichtung nach Anspruch 1, bei welcher einer der Versiegelungssbacken (52) einen sich durch denselben erstreckenden Schlitz enthält und der Trägerstreifen (18) durch den Schlitz nahe dem am Trägeranzeigestreifen (18) zu befestigenden Packungsende verläuft. 15  
3. Vorrichtung nach Anspruch 2, bei welcher der Schlitz zwischen dem wenigstens einen Streifensiegelungsbalken (62) und einem ausgeschnittenen Teil (68) des einen Versiegelungssbackens (52) gebildet ist. 20  
4. Vorrichtung nach einem der vorangehenden Ansprüche, bei welcher ein erster Streifensiegelungsbalken (62) an einem ersten Versiegelungssbacken (52) und ein zweiter Streifenversiegelungsbalken an einem zweiten Versiegelungssbacken (53) befestigt ist, und bei welcher eine Aktivierung des ersten und zweiten Versiegelungssbackens (52,53) zur Bildung der Pakungs-Querversiegelung den ersten und zweiten Siegelungsbalken aktiviert, um eine Packung am Anzelgeträgerstreifen (18) lösbar zu befestigen. 25  
5. Vorrichtung nach einem der vorangehenden Ansprüche, bei welcher die Streifenantriebseinrichtung (30) einen Schrittmotor (32) und ein Schrittschalttrad (36) enthält und der Schrittmotor (32) das Schrittschalttrad (36) so dreht, daß es den Trägeranzeigestreifen (18) steuerbar zur Versiegelungsstation (50) fördert. 30  
6. Vorrichtung nach einem der vorangehenden Ansprüche, mit einer Einrichtung zum Trennen benachbarter Vorformen längs der Querversiegelung zum Bilden der unteren und oberen Versiegelung von Verpackungen, die sich jeweils oberhalb und unterhalb der Versiegelungsstation erstrecken. 35  
7. Verfahren zum Herstellen einer Anzahl von gefüllten, versiegelten Packungen, die an einem fortlaufenden Trägerstreifen (18) abnehmbar befestigt sind, wobei das Verfahren die folgenden Schritte umfaßt:  
Ausbilden einer Reihe von Packungsvorformen, deren jede so geformt ist, daß sie ein Produkt aus einer Produktdvorratsquelle aufnimmt; und  
bei jeder Vorform in einer Versiegelungsstation (50) Ausbilden einer Querversiegelung über die Vorform zur Bildung einer oberen Versiegelung einer gefüllten Packung, die sich unterhalb der Versiegelungsstation (50) erstreckt, und einer unteren Versiegelung einer zu füllenden Packung, die sich oberhalb der Versiegelungsstation (50) erstreckt; gekennzeichnet durch folgende Schritte:  
Auswählen des Trägerstreifens aus einem siegelbaren Material;  
Anordnen des fortlaufenden siegelbaren Trägerstreifens (18) nahe den Packungsvorformen; und  
gleichzeitig mit dem Ausbilden der Querversiegelung abnehmbares Befestigen des oberen Endes der gefüllten Packung am Trägerstreifen (18) durch Bewegen des oberen Endes der gefüllten Packung gegen den Trägeranzeigestreifen (18) und lösbare Verbinden der oberen Versiegelung der gefüllten Packung mit dem Trägerstreifen (18). 40  
8. Verfahren nach Anspruch 7, bei welchem das Versiegeln der Vorformen in der Versiegelungsstation (50) durch Versiegelungssbacken (52,53) durchgeführt wird, die gleichzeitig ein Ende der gefüllten Packung am Trägerstreifen (18) abnehmbar befestigen. 45  
9. Verfahren nach Anspruch 8, bei welchem ein Versiegelungssbacken (52) eine Öffnung enthält, durch die der Trägerstreifen (18) laufen kann, der Trägerstreifen (18) in enge Nachbarschaft mit der Packungsvorform geführt wird und die Packungsvorform am Trägerstreifen durch die Versiegelungssbacken (52,53) abnehmbar befestigt wird. 50  
10. Verfahren nach Anspruch 9, bei welchem der Trägeranzeigestreifen (18) durch die Öffnung in dem 55

einen Versiegelungsbacken (52) und zur Versiegelungsstation (50) hin gefördert wird, indem ein Schrittschalttrad (36) einer Streifenantriebseinrichtung (30) mittels eines Schrittmotors (32) der Streifenantriebseinrichtung (30) gedreht wird.

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#### Revendications

- Appareil pour la fabrication d'une pluralité d'emballages scellés (70) qui sont fixés de façon à pouvoir être détachés à une bande support de présentation (18), l'appareil comprenant :

10

un dispositif (12) de formation de sac pour former une préforme d'emballage, la préforme étant configurée pour recevoir un produit ;

15

un poste de scellement (50) disposé au voisinage dudit dispositif de formation de sac (12), le poste de scellement (50) comprenant des mâchoires de scellement (52, 53) pour former un joint transversal au travers de la préforme de manière à former un joint supérieur d'un emballage rempli s'étendant en-dessous du poste de scellement (50) et un joint inférieur d'un emballage à remplir s'étendant au-dessus du poste de scellement (50) ;

20

l'appareil étant caractérisé en ce qu'il comprend en outre :  
un dispositif (30) d'entraînement de bande pour amener une bande (18) continue support de présentation pouvant être scellée en un emplacement adjacent au poste de scellement (50) ; et

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au moins une barre de scellement (62) de la bande pour fixer de façon détachable une extrémité de chaque emballage à la bande (18) support de présentation simultanément au scellement d'une extrémité de l'emballage par les mâchoires de scellement (52, 53) ; grâce à quoi les emballages scellés remplis (70) sont fixés à la bande support de présentation (18) et peuvent être retirés de la bande sans endommager la condition d'étanchéité des emballages.

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2. Appareil selon la revendication 1, dans lequel l'une desdites mâchoires de scellement (52) comprend une fente qui s'étend à travers elle et la bande support (18) passe à travers la fente vers un emplacement adjacent à l'extrémité de l'emballage qui doit être fixée à la bande support de présentation (18).

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- Appareil selon la revendication 2, dans lequel la fente est définie entre ladite au moins une barre (62) de scellement de la bande et une partie (66) découpée de ladite une desdites mâchoires de scellement (52).

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4. Appareil selon l'une quelconque des revendications précédentes, dans lequel une première barre (62) de scellement de bande est fixée à une première mâchoire de scellement (52) et une seconde barre de scellement de bande est fixée à une seconde mâchoire de scellement (53), et dans lequel l'actionnement desdites première et seconde mâchoires de scellement (52, 53) pour former la jonction transversale de l'emballage actionne les première et seconde barres de scellement pour fixer de façon amovible un emballage à la bande support de présentation (18).

5. Appareil selon l'une quelconque des revendications précédentes, dans lequel le dispositif (30) d'entraînement de la bande comprend un moteur pas à pas (32) et une roue d'entraînement pas à pas (36), et le moteur pas à pas (32) fait tourner la roue d'entraînement pas à pas (36) pour faire avancer de façon contrôlée la bande (18) support de présentation en direction du poste de scellement (50).

6. Appareil selon l'une quelconque des revendications précédentes comprenant en outre :

des moyens pour séparer les préformes adjacentes le long de la jonction transversale de manière à former les joints inférieur et supérieur des emballages qui s'étendent respectivement au-dessus et au-dessous du poste de scellement.

7. Procédé de fabrication d'une pluralité d'emballages scellés remplis qui sont fixés de façon amovible à une bande support continue (18), le procédé comprenant les étapes consistant à :

former une série de préformes d'emballage, dont chacune est configurée de façon à recevoir le produit à partir d'une source d'approvisionnement de produit ; et pour chaque préforme, former au niveau d'un poste de scellement (50) un joint de scellement transversal au travers de la préforme pour former un joint supérieur d'un emballage rempli, s'étendant en-dessous du poste de scellement (50) et un joint inférieur d'un emballage à remplir s'étendant au-dessus du poste de scellement (50) ;

le procédé étant caractérisé en ce qu'il comprend en outre les étapes consistant à :

choisir ladite bande support en un matériau pouvant être scellé ; positionner ladite bande (18) support de matériau pouvant être scellé, continue, adjacente aux préformes d'emballage ; et simultanément à la formation de la jonction transversale, fixer de façon détachable le som-

met de l'emballage rempli à la bande support (18) en déplaçant le sommet de l'emballage rempli contre la bande support de présentation (18) et en réalisant une jonction amovible au joint supérieur de l'emballage rempli avec la 5 bande support (18).

8. Procédé selon la revendication 7, dans lequel le scellage des préformes au poste de scellement (50) est effectué par les mâchoires de scellement 10 (52, 53) qui fixent simultanément, de façon qu'elle puisse être détachée, une extrémité de l'emballage rempli à la bande support (18).
9. Procédé selon la revendication 8, dans lequel une 15 mâchoire de scellement (52) comprend une ouverture au travers de laquelle la bande support (18) peut passer, le procédé comprenant en outre le fait de faire passer la bande support (18) à proximité proche de la préforme d'emballage et à fixer de 20 façon détachable la préforme d'emballage à la bande support au moyen des mâchoires de scellement (52, 53).
10. Procédé selon la revendication 9, dans lequel la 25 bande support de présentation (18) est avancée à travers l'ouverture dans l'une des mâchoires de scellement (52) et en direction du poste de scellement (50), en faisant tourner une roue (36) d'avance pas à pas d'un dispositif d'entraînement 30 (30) de la bande au moyen d'un moteur pas à pas (32) du dispositif (30) d'entraînement de la bande.

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FIG. I

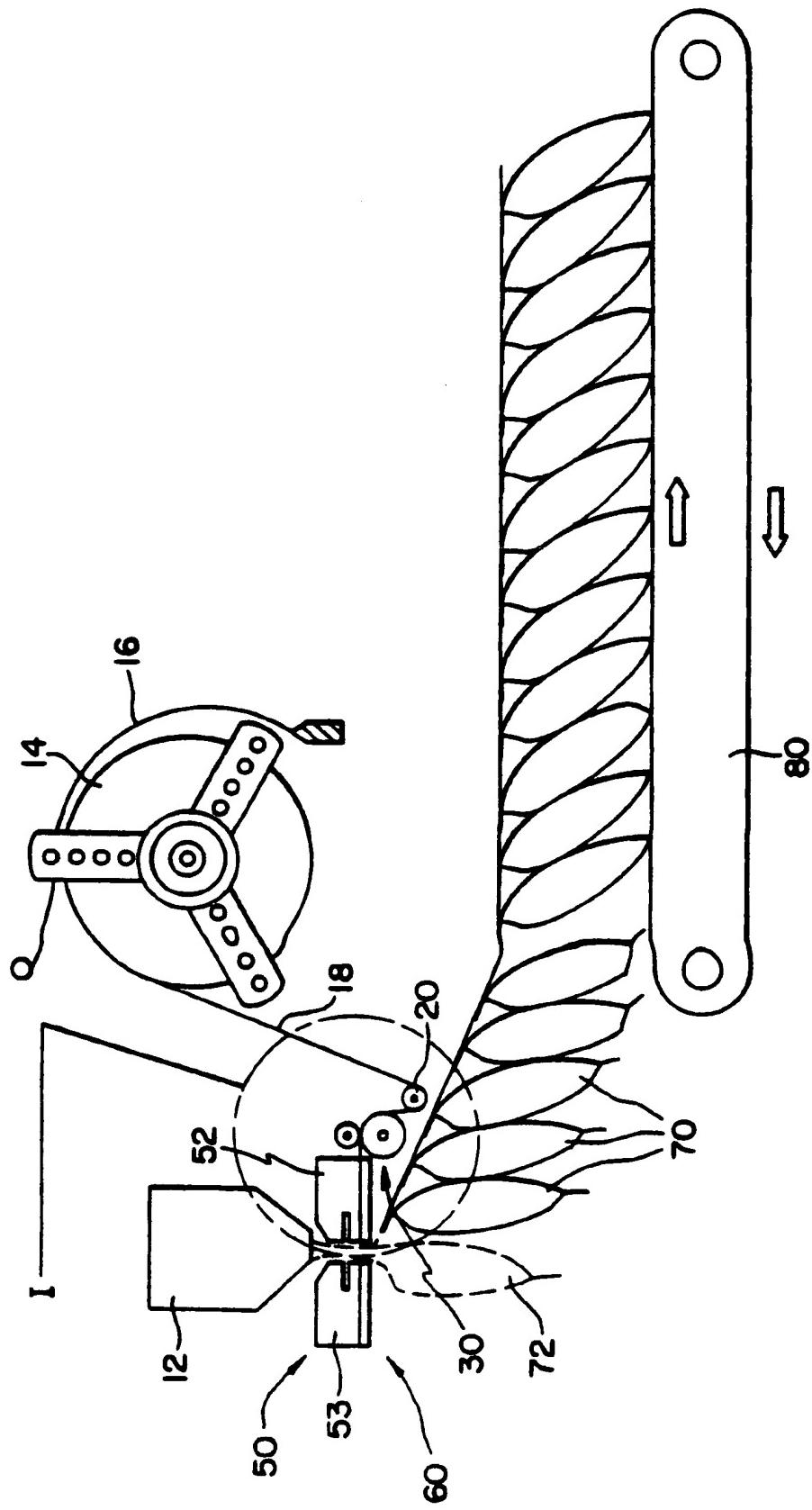


FIG. 2A

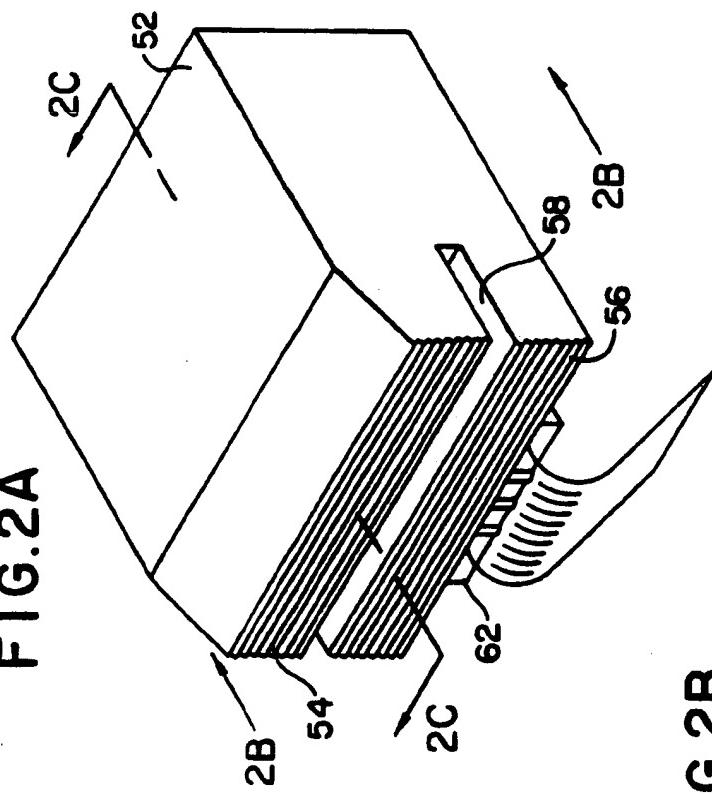


FIG. 2C

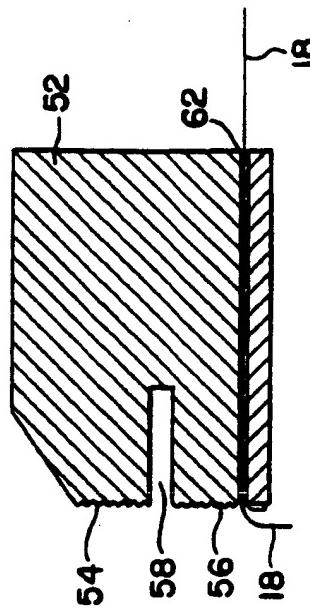


FIG. 2B

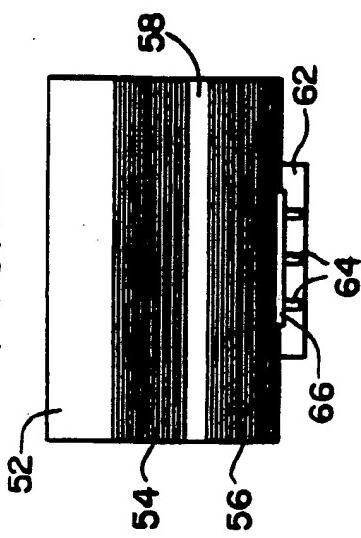


FIG. 3B

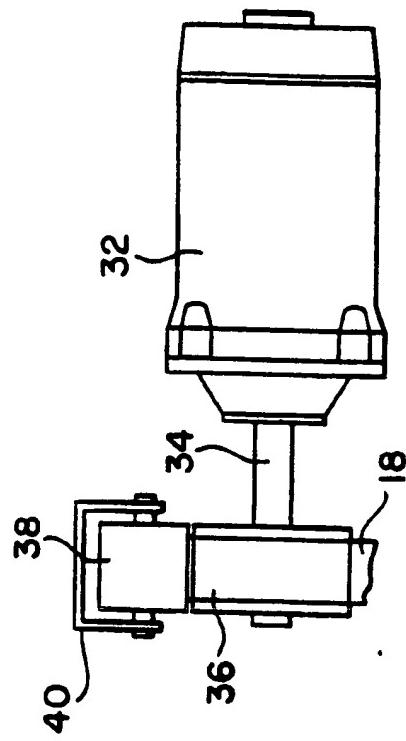
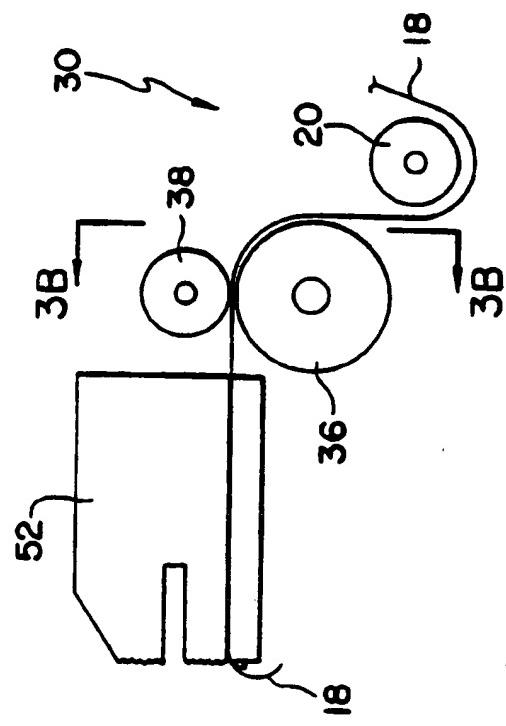
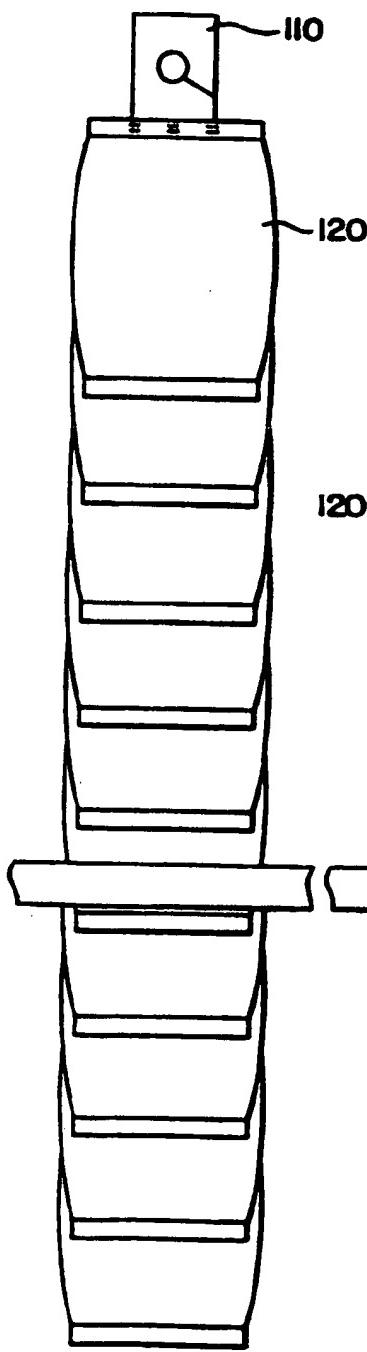


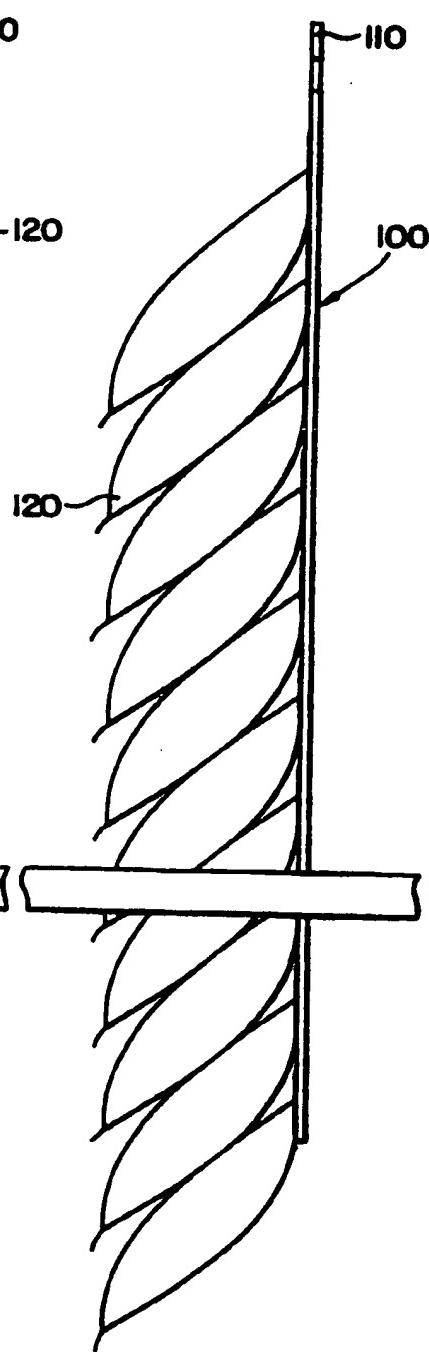
FIG. 3A



**FIG. 4A**



**FIG. 4B**



**FIG. 4C**

